8.15 WATER RESOURCES

This AFC section provides a discussion of the existing water resources in the vicinity of the Pico Power Project (PPP) site and assesses the potential effects of project construction and operations on water resources. Specifically, this chapter discusses the PPP and its potential impact on the following areas of concern:

- Use of reclaimed water for cooling and process water
- Depletion of water supplies
- Disposal of waste water
- Compliance with State water policies
- Groundwater degradation
- Storm water impacts
- Flooding impacts

Section 8.15.1 discusses the existing hydrologic environment. Potential environmental effects of the PPP construction and operation on water resources are assessed in Section 8.15.2. Section 8.15.3 discusses proposed mitigation measures that will prevent significant impacts. Unavoidable adverse impacts are summarized in Section 8.15.4 (the section indicates that there will be no significant adverse impacts). A discussion of cumulative project impacts is presented in Section 8.15.5. Section 8.15.6 presents applicable laws, ordinances, regulations, and standards (LORS) related to water resources. Section 8.15.7 lists relevant regulatory agencies and contacts. Section 8.15.8 discusses project permits that relate to water resources and presents a schedule for obtaining those permits. References are provided in Section 8.15.9.

8.15.1 Affected Environment

The PPP is located at 850 Duane Avenue in the City of Santa Clara, Santa Clara County, California. The City of Santa Clara is located on the southern end of San Francisco Bay, and is bounded on the north, east, and south by San Jose, on the west by Sunnyvale, and on the southwest by Cupertino. The City of Santa Clara occupies part of an alluvial plain that stretches across the width of the south bay region, approximately three miles wide by seven miles long. Ground elevations vary rather uniformly from near sea level at the north end of the City of Santa Clara to 175 feet mean sea level (MSL) at its southern boundary (City of Santa Clara 2002a). The average grade on the valley floor ranges from nearly flat to 2 percent (FEMA 1999).

The PPP project site will accommodate generation facilities, control/administration building, switchyard, emission control equipment, storage tanks, and a parking area. The project site is level, with an average elevation of approximately 32 feet MSL.

8.15.1.1 Climate and Precipitation

The climate in the project area is Mediterranean (NOAA division CA-04: Central Coast) with moderate year-round temperatures and a winter rainy season. The marine influence from the Pacific Ocean and the City of Santa Clara's proximity to San Francisco Bay have a substantial moderating influence on the local climate. Monthly average temperatures range from 46°F to 71°F. Temperatures exceeding 90°F occur on

average only 16 days per year and temperatures below 32°F on average happen 5 days per year (FEMA 1999).

The San Jose International Airport is located less than one mile east of the PPP project site. Average annual temperature and precipitation data at the San Jose International Airport were obtained from 1990 through 2000 (with a break in the record for the year 1999, for which precipitation data were not available). During this period of record (excluding 1999), the mean average temperature was 61.42 °F. Average annual precipitation over this same period varied between 9.94 inches (1990) and 23.98 inches (1995) with a 10-year average annual precipitation of 17.19 inches (NCDC 2002). This 10-year average is higher than the historic 125-year average in downtown San Jose of approximately 13 inches (SCVWD 2001). Table 8.15-1 lists the 10-year average rainfall amounts by month at the San Jose International Airport.

Table 8.15-1. Average 10-year average monthly precipitation at San Jose International Airport (inches).

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
3.84	3.83	2.75	0.78	0.98	0.24	0.06	0.10	0.11	0.56	1.20	2.74

Annual 10-year average (1990 to 2000, excluding 1999) =17.19 inches
Source: National Climatic Data Center, Annual Summary 2002

8.15.1.2 Groundwater Resources

The project site is situated within the Santa Clara Valley Groundwater Basin (Figure 8.15-1), the northern-most of three linearly, interconnected, groundwater basins: Santa Clara Valley, Coyote Valley and Llagas Basin. These three groundwater basins occupy the broad, northeast-southwest trending inter-mountain lows in the central portion of the Santa Clara County.

The Santa Clara Valley Groundwater Basin extends from Coyote Narrows at Metcalf Road in the south to the County's northern boundary at San Francisco Bay. The Diablo Mountain Range bounds the basin on the east and the Santa Cruz Mountains comprise the basin's western boundary. The Santa Clara Valley Basin is approximately 22 miles long and 15 miles wide with a surface area of approximately 225 square miles (SCVWD 2001).

Hydrostratigraphy

The Santa Clara Valley Groundwater Basin is divided into three hydrogeologic units: 1) the forebay – consisting of the elevated edges of the basin, 2) the upper aquifer zone, and 3) the lower aquifer zone. Within the elevated forebay area, sediments were deposited as alluvial fans from streams emanating from the mountains. These deposits consist predominantly of coarse sands and gravels with discontinuous leaky aquitards (Iwamura 1995). In the forebay area, groundwater exists primarily under unconfined conditions. Both upper and lower aquifer zones are highly stratified, containing multiple aquifers and aquitards (SCVWD 1989). Regional groundwater flow is northeast, toward San Francisco Bay.

Within the interior portion of the groundwater basin, upon which the City of Santa Clara and the PPP project site are located, fine-grained deposits are stratified and interbedded with sand and gravel aquifers. The maximum depth of these deposits exceeds 1500 feet (Iwamura 1995). Within these deposits, a continuous regional aquitard is present at depths of between 100 feet to 200 feet (Iwamura 1995). This

Figure 8.15-1. Santa Clara County Valley groundwater basin.

Figure 8.15-1 can be found as a separate PDF file in this folder.

regionally extensive aquitard separates the upper aquifer zone from the lower aquifer zone. In general, the upper aquifer zone is considered to comprise those aquifers that occur within 150 feet of ground surface. The lower aquifer zone encompasses those aquifers that are present at depths greater than 150 feet below ground surface.

Recharge to the Santa Clara Valley Groundwater Basin consists of both natural groundwater recharge and artificial recharge of local surface water and imported water. Natural groundwater recharge includes recharge from rainfall, net leakage from pipelines, seepage from surrounding hills, seepage into and out of the groundwater basin, and net irrigation return flows to the basin. Artificial recharge occurs via percolation ponds as a part of the Santa Clara Valley Water District's (SCVWD) artificial recharge operation (Iwamura 1995).

Upper Aquifer Zone

Groundwater occurs in the upper aquifer zone under either unconfined or confined (under pressure) conditions. Depths to groundwater within the upper aquifer have been measured within 30 feet of the ground surface (SCVWD 2001). At present, aquifers within the upper aquifer zone are little used, serving only local domestic or agricultural purposes or for the extraction of chemical contaminants in remediation projects (Iwamura 1995). Recharge to the upper aquifer zone is primarily a result of direct infiltration of precipitation, net leakage from pipelines, recharge from rivers and creeks and seepage into and out of the basin.

Lower Aquifer Zone

The lower aquifer zone occurs beneath the regional aquitard and is confined. The lower confined aquifer zone is also referred to as the "pressure zone" (City of Santa Clara 2002a). The lateral extent of the "pressure zone" or lower confined aquifer is shown on Figure 8.15-1. The lower confined aquifer zone represents the principal source of groundwater for potable and industrial use in Santa Clara Valley (SCVWD 2001). Natural groundwater recharge enters the lower confined aquifer zone primarily via deep infiltration in the elevated lateral and southern forebay areas of the basin, via seepage from surrounding hills, and from groundwater flow into and out of the basin.

Regional Geologic Cross-Section

Figure 8.15-1 shows the approximate location of a generalized regional cross-section of the Santa Clara Valley Groundwater Basin. This regional cross-section is presented in Figure 8.15-2 (Iwamura 1995). The cross-section starts at Highway 237 in the north and extends southward to Tully Road. This cross-section provides a conceptual geologic model rather than detailed stratigraphic data, and illustrates the highly stratified nature of subsurface alluvium. Layers of sand and gravel alternate with layers of silt or clay. The approximate vertical extent of the both the upper and lower aquifer zones are also shown on this figure. The highly stratified sequence of the alluvial deposits depicted is also conceptually consistent with subsurface conditions at the PPP project site.

Land Subsidence

Significant groundwater use in the Santa Clara Valley began around 1900 with the development of irrigated agriculture (USGS 1995). Land subsidence was first noticed in 1919 in the Santa Clara Valley in response to groundwater pumping. At that time, 0.4 feet of subsidence was measured in downtown San Jose. Between 1912 and 1932, over 3 feet of subsidence were measured at the same location (SCVWD 2001). From 1912 to 1970, cumulative subsidence measured at the same San Jose location totaled approximately 13 feet (SCVWD 2001). In the mid-1960s, imported water from San Francisco's Hetch Hetchy reservoir and the State Water Project's South Bay Aqueduct helped restore groundwater

levels and curb land subsidence. Since this time, a combination of efforts, including the use of imported water, natural recharge, decreased groundwater extraction and increased artificial recharge, has reduced land subsidence to an average of 0.012 feet per year (SCVWD 2001).

As a result of the land subsidence induced by groundwater extraction, the lower reaches of stream and rivers near San Francisco Bay reversed gradient such that tidal waters traveled up shallow rivers and creeks and entered the upper aquifer zone. In isolated cases, high salinity water was also drawn into the lower confined aquifer zone through pumping of irrigation wells screened in multiple zones or through abandoned wells (Iwamura 1995; RWQCB 2001). Current SCVWD groundwater management programs ensure that groundwater resources and water levels are sustained by natural and artificial recharge, periodic water balance evaluations, estimation of the operational aquifer storage capacity and by water efficiency programs. In addition, the SCVWD operates a wellhead protection program that identifies areas of the basin that are vulnerable to contamination (SCVWD 2001).

Santa Clara Valley Groundwater Basin Yield

The 2000 annual groundwater withdrawal volume from the Santa Clara Valley Groundwater Basin totaled approximately 110,0000 acre-feet (RWQCB 2001). The allowable withdrawal from the basin (or its safe yield) is dependent upon a number of factors including the cumulative groundwater withdrawals by water agencies, the quantity of water recharged and the carry over in groundwater storage from the previous year. While the Santa Clara Valley Groundwater Basin is currently at near record-high water levels, the firm safe yield of this groundwater basin is not exactly known and is also dependent upon the continued successful operation of the SCVWD's groundwater recharge program (SCVWD 2001; City of Santa Clara 2002a).

With respect to the City of Santa Clara and the PPP site, within fiscal year 2000 to 2001, 17,932 acre-feet (5,842.8 million gallons (MG)) were pumped from 27 groundwater production wells within the City. Future supply projections use an assumed (approximate) limit of 8,000 MG (24,553 acre-feet) per year as the upper limit of groundwater withdrawal for the City (City of Santa Clara 2002a). Based upon these estimates of yield, the City has a current excess available groundwater capacity of 6621 acre-feet (2157.2 MG) per year.

Basin Groundwater Quality

Current groundwater beneficial uses for the Santa Clara Valley are municipal and domestic supply, industrial process supply, industrial service supply and agricultural.

Groundwater monitoring results for the Santa Clara Valley show that water quality is excellent to good for all major zones of the basin (RWQCB 2001). Most waters are calcium-magnesium-bicarbonate type. Some limited areas of the Santa Clara Valley Groundwater Basin contain concentrations of mineral salts that adversely affect the use of the groundwater. Geographic areas that contain somewhat degraded groundwater include:

- Southern portion of the forebay
- Small area of the lower aquifer zone underlying the Palo Alto area
- The upper aquifer zone of the bay lands

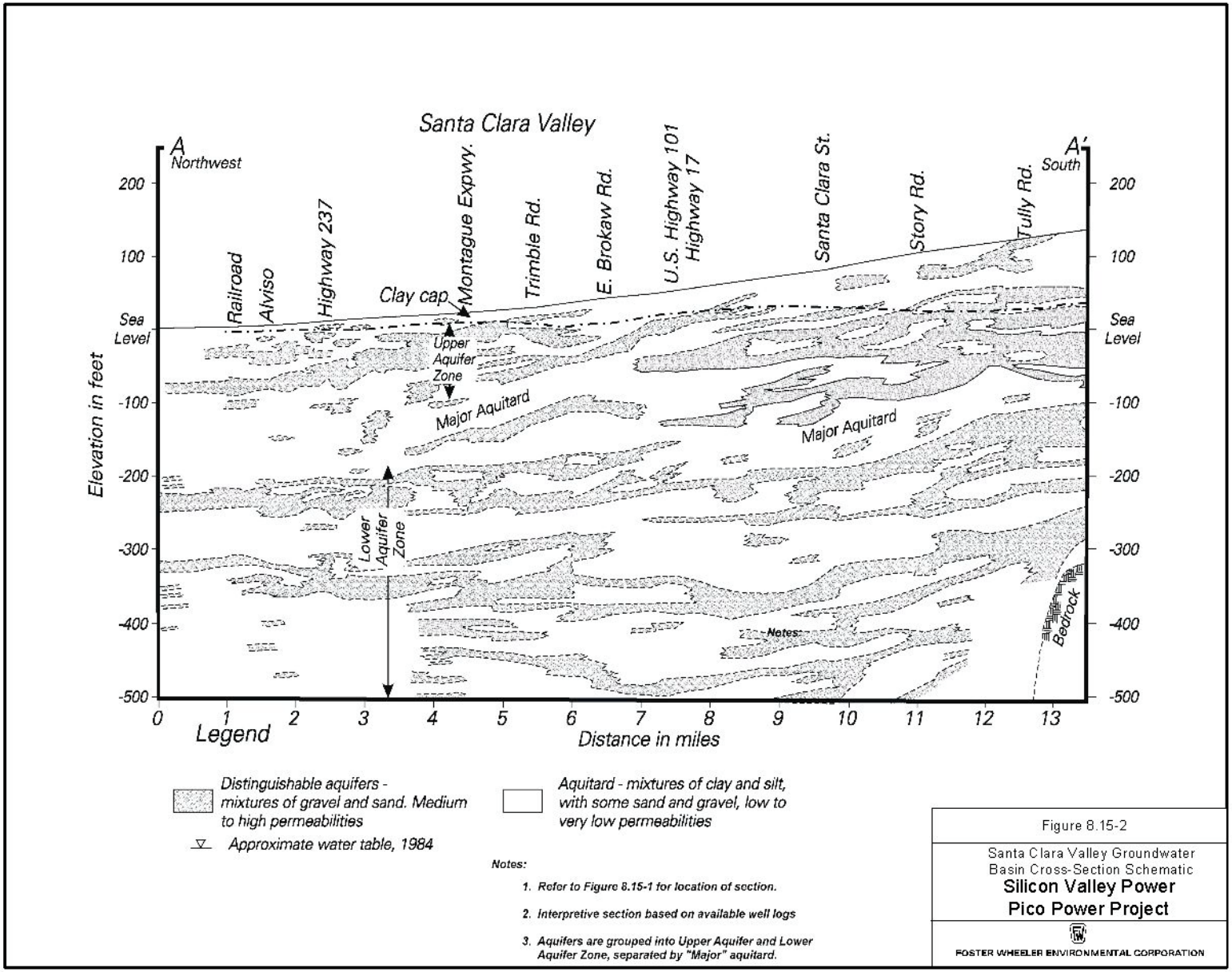
Santa Clara Valley
A
Northwest
A'
South
Railroad
Alviso
Highway 237
Montague Expwy.
Trimble Rd.
E. Brokaw Rd.
U.S. Highway 101
Highway 17
Santa Clara St.
Story Rd.
Tully Rd.
Clay cap
Upper Aquifer Zone
Major Aquitard
Major Aquitard
Lower Aquifer Zone
Bedrock
Notes:
Sea Level
Elevation in feet
200
100
-100
-200
-300
-400
-500
0
1
2
3
4
5
6
7
8
9
10
11
12
13
Distance in miles
Legend
Distinguishable aquifers - mixtures of gravel and sand. Medium to high permeabilities
Approximate water table, 1984
Aquitard - mixtures of clay and silt, with some sand and gravel, low to very low permeabilities
Notes:
1. Refer to Figure 8.15-1 for location of section.
2. Interpretive section based on available well logs
3. Aquifers are grouped into Upper Aquifer and Lower Aquifer Zone, separated by "Major" aquitard.
Figure 8.15-2
Santa Clara Valley Groundwater Basin Cross-Section Schematic
Silicon Valley Power
Pico Power Project
FOSTER WHEELER ENVIRONMENTAL CORPORATION

Table 8.15-2 presents a statistical summary of important dissolved constituents found in natural groundwater within the Santa Clara Valley Groundwater Basin (RWQCB 2001).

Table 8.15-2. Statistical summaries of Santa Clara Valley groundwater data and water quality objectives.

Constituent [1]	Median Concentration Lower Aquifer Zone	Median Concentration Upper Aquifer Zone	Drinking Water Standard [2,3]
Aluminum (ug/L[4])	6	54	1,000[2]
Arsenic (ug/L)	0.2	2	50[2]
Barium (ug/L)	159	92	1,000[2]
Boron (ug/L)	132	340	None
Cadmium (ug/L)	<1	<0.5	5[2]
Chloride (mg/L)	43	110	500[3]
Chromium (ug/L)	1	1	50[2]
Copper (ug/L)	2.7	0.6	1,000[2]
Fluoride (mg/L [5])	0.12	0.2	1.8[2]
Iron (u/L)	11	115	300[3]
Lead (ug/L)	0.6	<0.5	50[2]
Manganese (ug/L)	4	430	50[3]
Mercury (ug/L)	<1	<0.2	2[2]
Nitrate (mg/L)	11	0.03	45[2]
Selenium (ug/L)	1.5	0.9	50[2]
Silver (ug/L)	<1	<0.5	100[2]
Sulfate (mg/L)	46	161	500[3]
Total Dissolved Solids (mg/L)	420	991	1,000[3]
Zinc (ug/L)	5	6	5000[3]

1. For common inorganic water quality constituents
2. Maximum contaminant level as specified in Table 64431-A of Section 64431, Title 22, of the California Code of Regulations
3. Secondary maximum contaminant level as specified in Table 64449-A and Upper Recommended Contaminant Ranges as outlined in Table 64449-B of Section 64449, Title 22, of the California Code of Regulations
4. ug/L = micrograms per liter
5. mg/L = milligrams per liter

Reference: RWQCB 2001

In addition to the inorganic constituents listed in Table 8.15-2, volatile organic compounds (VOCs) have been detected in groundwater within the Santa Clara Valley. VOCs in groundwater are typically associated with releases from industrial facilities, gasoline stations and dry cleaners. According to the Department of Health (DHS) database records, since 1984 only two public water supply wells (in the lower confined aquifer) in the Santa Clara Valley Groundwater Basin have had confirmed VOC concentrations above drinking water standards. One of these wells was destroyed. In the second well, VOCs above drinking water criteria have not been detected since 1992.

With respect to the upper aquifer zone, materials toxic to humans have been introduced into the shallow aquifer at a number of different locations. These pollutants include petroleum products, liquids containing heavy metals such as lead and chromium, organic solvents such as acetone and benzene, coliform bacteria, and many others. Point sources that have had a past release or have the potential to experience future releases of hazardous materials include regulated and unregulated hazardous waste generators, leaking tank sites, toxic spills, landfills, etc. (RWQCB 2001). Numerous groundwater protection programs are in place to address these threats and recommend areas for improvement (RWQCB 2001; SCVWD 2001).

8.15.1.3 Surface Water Resources

Surface Water Drainage

Principal drainages within the Santa Clara Valley include Coyote Creek, Guadalupe River, Los Gatos Creek, Stevens Creek, and Permanente Creek. The PPP is situated within the Guadalupe River watershed. The Guadalupe River is located approximately one mile east of the site. The smaller creeks: San Tomas Aquinas and Saratoga, are situated approximately 1 to 1.5 miles west of the project site respectively.

The Guadalupe River drains from the Santa Cruz Mountains into the wetlands of southern San Francisco Bay with a watershed that covers an area of approximately 95 square miles. The Guadalupe River channel begins at the confluence of Guadalupe and Alamitos Creeks and flows northward approximately 14 miles through heavily urbanized portions of Santa Clara County before discharging into San Francisco Bay.

Surface water flow in the Guadalupe River has been measured by the USGS from 1929 to the current year (USGS 2001). The maximum measured discharge for the period of record is 11,000 ft^3/s (March 10, 1995). For the water year from October 2000 to September 2001, the maximum monthly flow occurred in February 2001 with a flow of 3580 cubic feet per second (cfs). The lowest flow occurred, on average, in August 2001 (151.4 cfs).

Water quality data for the Guadalupe River are collected by the United States Geological Survey (USGS). Additionally, the SCVWD sampled the river as a part of their Nonpoint Source Pollution Control Program to estimate the annual loads of metals and organics discharging to San Francisco Bay in each watershed within the Santa Clara Valley. The SCVWD study showed that the Guadalupe River watershed contributes 30 to 40 percent of the pollutant loads discharged to the Bay from Santa Clara County (SCVWD 1994).

Several water bodies in the Santa Clara Basin have also been designated under Section 303(d) of the Clean Water Act as impaired due to certain pollutants (RWQCB 2002). Saratoga Creek is one of the urban creeks that have been listed for diazinon. Water bodies in the Guadalupe River watershed (Guadalupe River, Alamitos Creek, Guadalupe Creek, Calero Reservoir and Guadalupe Reservoir) have been listed for mercury.

In response to many water quality and aquatic beneficial use surface water problems within Santa Clara County, in 1996 the Santa Clara Basin Watershed Management Initiative (WMI) was created to develop and implement a comprehensive watershed management program.

Wetlands

No wetlands are present on the PPP project site. The South Bay wetlands, along the Alviso shoreline, comprise part of a large wildlife refuge, the Don Edwards San Francisco Bay National Wildlife Refuge. Discharge of treated water from the San Jose/Santa Clara Water Pollution Control Plant into South San Francisco Bay is limited during the summer to help maintain the salt marsh habitat of South Bay.

Floodplains

The Federal Emergency Management Agency (FEMA) has issued flood insurance rate maps for the City of Santa Clara (FEMA 1999). A reproduction of the FEMA map showing the flood zones in relation to these sites is provided in Figure 8.15-3. This map indicates that the PPP project site is not located within a 100-year floodplain (Zone A), nor is it located within an area of coastal or tidal flooding hazards (Zone V).

None of the candidate construction laydown and worker parking areas contains wetlands, streams, drainages, or 100-year floodplain zones.

8.15.1.4 Water Agencies

City of Santa Clara

The City of Santa Clara obtains its potable water supply from three sources. Often these sources are used interchangeably or blended together at the City of Santa Clara water plant. Approximately 35 percent of the water supply is treated surface water purchased from the Santa Clara Valley Water District and from San Francisco's Hetch Hetchy System. The remaining 65 percent is pumped from 27 deep groundwater extraction wells. In total, these three water sources produce an average of 24 mgd to meet city residents' water supply demand. The existing City of Santa Clara water plant capacity is 80 mgd with an aboveground water storage capacity of 27.3 mgd (City of Santa Clara 2002b).

The City of Santa Clara 2002 Water Master Plan summarizes existing water supply conditions and provides a discussion of strategies to meet future projected water demands. This document, in conjunction with the Integrated Water Resource Plan (to be completed by December 2002), defines future water supply for the City of Santa Clara. Current measurement of groundwater extraction and estimates of available groundwater yield indicate that the City has a current excess available groundwater capacity of 6621 acre-feet (2157.2 mg) per year.

South Bay Water Recycling

In the City of Santa Clara, reclaimed/recycled water is provided via South Bay Water Recycling (SBWR). The recycled water meets the California Administrative Code (CAC) Title 22 Division 4 requirements for "unrestricted use." The users of recycled water must ensure that a number of regulatory requirements specified in CAC Title 22 are met.

The SBWR Program was initiated to reduce the discharge of treated water flowing from the Water Pollution Control Plant (WPCP) into San Francisco Bay. The WPCP formed SBWR, which purchased the City of Santa Clara's recycled water system and is now the regional recycled water wholesaler within the WPCP service area (City of Santa Clara 2002a). SBWR provides oversight, promotes recycled water, operates the recycled water distribution system, and assists customers both technically and financially.

SBWR is administered by the City of San Jose, although the recycled water is received from the San Jose/Santa Clara Water Pollution Control Plant (WPCP), which is jointly owned by the City of Santa Clara and the City of San Jose.

The San Jose/Santa Clara WPCP has a capacity of 167 mgd and provides tertiary waste water treatment. The plant services nine tributary agencies including the City of Santa Clara in which the PPP is located. Approximately 90 percent of the treated waste water is discharged directly through Artesian Slough and into South San Francisco Bay. Roughly 10 percent of the treated waste water is recycled through SBWR pipelines that distribute the treated water for landscaping, agricultural irrigation and industrial needs (City of San Jose 2002).

Cooling water and non-cooling process makeup water for the PPP project will be provided by South Bay Water Recycling through the City of Santa Clara. The SBWR 24-inch recycled water line is located on the project site in the former Pico Way. The project will connect directly to this line.

8.15.2 Environmental Consequences

The potential effects of the project on water resources have been evaluated based on impacts to:

- Water supplies
- Use of reclaimed water for process and cooling water
- Disposal of waste water
- Compliance with State water policies
- Surface water quality and flooding hazards
- Groundwater degradation

8.15.2.1 Significance Criteria

The project would cause a significant environmental impact if it would cause substantial flooding, erosion, or siltation; substantially degrade surface water quality; substantially degrade or deplete groundwater resources; interfere substantially with groundwater recharge; or contaminate a public water supply.

8.15.2.2 Water Supply Impacts

The City of Santa Clara, via SBWR, will supply reclaimed tertiary treated water to meet cooling and process makeup requirements for the PPP site. A "will-serve" letter describing the City's water supply capabilities is included in Appendix 7-A.

The demonstrated performance of the reclaimed water system over the past five years indicates that the SBWR reclaimed water supply is highly reliable. However, the reclaimed water system does occasionally have both supply outages and water quality variability significant enough to warrant short-term service outages (Personal Communication, Eric Rosenbloom, South Bay Water Recycling, August 9, 2002 and letter from Randolph A. Shipes, Deputy Director attached in Appendix 7-C). Consequently, to ensure sustained continuous influent water supply, in the case of a short-term (historically

Figure 8.15-3. FEMA flood zones

Figure 8.15-3 can be found as a separate PDF file in this folder.

less than 72-hour) service outage in reclaimed water delivery, the PPP will use City of Santa Clara potable water for emergency backup.

The delivery of City potable water to the PPP to meet short-term backup water supply requirements will be enhanced by the construction of a new City groundwater extraction well. Current plans call for the well to be constructed on the southeast corner of the PPP site just east of the parking area (see Figure 2.2-2a). Though the City has sufficient capacity to serve the project's backup water needs, the City's conveyance system is not sufficient to supply the project. For this reason, the City has required that the project locate a well on site. The additional groundwater extraction well will be used to increase the pressure in the City's existing potable water distribution system. Currently, the City anticipates that this well will be completed in the lower confined aquifer with a total depth between 800 and 900 feet below ground surface and in accordance with SCVWD well construction requirements (SCVWS 1989). The anticipated yield for this groundwater extraction well is consistent with other City of Santa Clara extraction wells, estimated to be between 1,000 and 1,500 gpm (City of Santa Clara 2002).

As previously stated, this new City water supply well will primarily be used to supplement the conveyance capacity of the water pipeline in the PPP project vicinity since an increase in the supply of the City's potable system is not required to meet PPP requirements for backup process water. Since there is a calculated excess groundwater capacity available to the City from the lower confined aquifer of 2,157.2 mg per year, there are no anticipated impacts to the lower confined aquifer associated with the development of this City well. In addition, existing SCVWD groundwater management programs continue to ensure that groundwater resources and water levels are sustained by natural and artificial recharge, periodic water balance evaluations, estimation of the operational aquifer storage capacity and by water efficiency programs. Currently, as a result of SCVWD management and sufficient rainfall, groundwater levels in the lower confined aquifer are at historically high levels (City of Santa Clara 2002, SCVWD 2001).

The SCVWD considers the City of Santa Clara to provide responsible management of groundwater resources (personal communication, Ms. Seena Hoose, SCVWD, August 13, 2002). With respect to the construction of an additional City well, the SCVWD will require a well permit in compliance with Ordinance 90-1. This ordinance regulates the classification, construction, and destruction of wells and other deep excavations. As part of the well permitting process, a well construction application will be completed and submitted to the SCVWD for review and approval prior to well construction.

Water required for domestic uses and fire fighting will also be provided by the City of Santa Clara potable water system. Current PPP plans call for a new connection to be made to the existing 12-inch potable water line that runs along Duane Avenue.

Operation of the PPP will require an influent water supply of 0.94 million gallons per day (mgd) or 655 gallons per minute (gpm) during average water supply demand conditions (assumed at 61°F ambient temperature). Water demand during peak supply conditions will be 1.8 mgd (1,260 gpm), at 94°F ambient temperature with HSRG duct firing. The data for 61ºF were used for evaluating water supply requirements and impacts because this is essentially the average temperature at the project site. Worst-case water impact scenarios are based on the data for 94ºF, with inlet air chilling and duct firing. Figure 7.1-1 in Section 7 is a water balance diagram for the project.

The reclaimed water is suitable for use as cooling tower makeup and as feedwater for the power cycle makeup water treatment system. No treatment is expected for water used for cooling tower and process water make-up. Deionized water will be injected into the gas turbines for NO_x emissions control.

Use of reclaimed water ensures the least impact to the local environment. Use of recycled (or reclaimed) water is in compliance with State water policy for water conservation and maximum reuse of waste water. The reclaimed water quality of the tertiary effluent from the South Bay Water Treatment Plant (San Jose/Santa Clara Water Pollution Control Plant) is shown on Table 8.15-3 (see following page). Available potable water quality data from the City of Santa Clara is also presented in Table 8.15-3.

All recycled water pipelines, storage tanks, and ancillary facilities will be constructed in compliance with California Code of Regulations Titles 17 and 22. Title 17 addresses the requirements for backflow prevention and cross-connections, while Title 22 addresses other health-related issues. A Title 22 Engineer's Report must be submitted and approved by the State Department of Health Services and the Regional Water Control Board (RWQCB). The RWQCB will issue Reclamation Requirements to ensure the recycled water is properly treated and safely used.

8.15.2.3 Construction Water Supply

During construction of the proposed project, water will be required primarily for dust suppression. Due to the limited duration of construction activities and the relatively small water requirements (less than 200 gpm for dust control and soil compaction) of the construction phase of the project, no significant adverse impacts to water supply are expected to result. Potential water supply impacts due to construction will be limited to surface water runoff during excavation and construction of these elements of the infrastructure. Such construction impacts are small and can be controlled through best management practices and proper housekeeping at the construction site.

8.15.2.4 Waste Water Disposal

Table 8.15-4 shows the expected waste water streams from the PPP site.

Table 8.15-4. Waste water streams from PPP site.

Waste Stream	Average Discharge (gpm)	Peak Discharge (gpm)
Cooling Tower Blowdown	182	385
Sanitary Waste Water	2	2
Plant Drainage	184	387

The process discharge will be monitored as required to ensure that the discharge to the existing sewer meets appropriate City of Santa Clara discharge limits. Average flow rates listed are based upon 61°F ambient temperature. Peak flow rates assume 94°F ambient temperature. Details for each of these waste streams are discussed below.

Table 8.15-3. Summary of average influent water quality for PPP water supply.

Water Quality Parameter [a]	South Bay Recycled Water (Primary Supply)	Santa Clara Potable Water Supply (Backup Supply)	Drinking Water Standard [b,c]
General Parameters			
Alkalinity, Total (mg/L)	184	215	None
Bicarbonate (mg/L)	184	N/A	None
Hardness (as $CaCO_3$) (mg/L)	245	246	200
Nitrate (as NO_3) (mg/L)	40	15	45[b]
pH	7	7.6	6.0 – 9.0
Total Dissolved Solids (mg/L)	749	317	1,000[c]
Chemical Parameters			
Arsenic (ug/L)	1.17	N/A	50[b]
Boron (ug/L)	525	157	None
Cadmium (ug/L)	0.5	N/A	5[b]
Calcium (mg/L)	48.3	66	None
Chloride (mg/L)	208	32	500[c]
Chromium, Total (ug/L)	1	<MDL	50[b]
Copper (ug/L)	3	<MDL	1,000[c]
Lead (ug/L)	1	N/A	Action Level = 15
Magnesium (mg/L)	28.7	19	None
Mercury (ug/L)	0.0026	N/A	2[b]
Nickel (ug/L)	7	<MDL	100[b]
Potassium (mg/L)	14.9	<MDL	None
Silver (ug/L)	1	N/A	100[c]
Sodium (mg/L)	161	27	None
Sulfate (mg/L)	107	40	500[c]
Zinc (ug/L)	51.9	<MDL	5000[c]

[a] For common inorganic water quality constituents

[b] Maximum contaminant level as specified in Table 64431-A of Section 64431, Title 22, of the California Code of Regulations

[c] Secondary maximum contaminant level as specified in Table 64449-B of Section 64449, Title 22, of the California Code of Regulations

mg/L = milligrams per liter
ug/L = micograms per liter
<MDL = below method detection limit

Reference: SBWR water quality obtained from "Recycled Water Quality Information for the San Jose/Santa Clara WPCP, 2001." Website address: www.ci.san-jose.ca.us/sbwr/waterquality2001.htm

Reference: Santa Clara Potable water quality data was obtained from City of Santa Clara (Water Quality Table 1). Data are based on 1996 through 1999 Santa Clara well water analyses.

Cooling Tower Blowdown

Circulating (or cooling) water system blowdown will consist of reclaimed water that has been concentrated between 3 to 7 cycles and residues of the chemicals added to the circulating water. These chemicals will control scaling and biofouling of the cooling tower and corrosion of the circulating water piping and condenser tubes. Cooling water treatment will require the addition of a pH control agent (acid), a mineral scale dispersant (i.e. polyacrylate polymer), corrosion inhibitors (phosphate based), and biocide (i.e. bleach or equivalent). The waste stream will be discharged via a pipeline to the existing 27-inch sanitary sewer main in Central Expressway. This stream will have a separate monitoring point, prior to entering the sewer, to assure it meets City of Santa Clara discharge limits. The volume of this relatively minor waste stream is expected to be 184 gpm under average conditions and 387 gpm under peak conditions. In order to determine the worst-case impact of operation, varying assumptions were used for flow balance determination and for cooling tower blowdown quality. Flows were determined assuming operation at 3 to 7 cycles of concentration, as greater flowrates occur at the lower cycles of operation. Cooling tower blowdown was determined for operation at three cycles of concentration, to project the expected concentrations in the discharge. Table 8.15-5 summarizes cooling tower blowdown water quality. Since cooling tower effluent will be similar in composition to recycled water quality, no significant pretreatment of wastes is required. However, all effluent to the City of Santa Clara sanitary sewer system will be discharged in accordance with the "*City Code, Rules and Regulations, Sewers and Sewage Disposal*" (City of Santa Clara 1996).

Sanitary Waste Water

There will be a maximum staff of 15 full-time employees working at the plant. The PPP will be operated by a staff consisting of 2 operators per 12 hour rotating shift, with 2 relief operators. There will also be 3 supervising/administrative personnel and 2 maintenance technicians present during the standard 8-hour work day. The facility will be operated 7 days per week, 24 hours per day. Sanitary waste water from sinks, toilets and other sanitary facilities will be collected and discharged to the existing sanitary sewer. An average flow of 2 gpm is expected to be discharged.

Plant Drainage

Miscellaneous general plant drainage will consist of area washdown, sample drainage, equipment leakage, and drainage from facility equipment areas. Water from these areas will be collected in systems of floor drains, sumps, and pipes within the PPP and discharged to an oil/water separator. The oil free discharge water will be sent to the 27-inch sanitary pipeline in Central Expressway. An average flow of 1 gpm and peak flow of 50 gpm is projected. The water will have essentially the same characteristics as the reclaimed water supplied to PPP; consequently, no pretreatment of wastes is required. However, all discharge to the City of Santa Clara sanitary sewer system will occur in accordance with the "City Code, Rules and Regulations, Sewers and Sewage Disposal" (City of Santa Clara 1996).

Temporary Construction Site Discharge

During construction, temporary erosion and sedimentation control measures will direct storm water runoff to existing surface drainage. Standard construction mitigation measures for erosion prevention and water quality assurance such as filter fabric or hay bale filtration will be very effective at this site because of the flat topography. Portable toilets will be supplied by a licensed contractor for collection and disposal of sanitary wastes during the construction period.

Table 8.15-5. Cooling tower blowdown water quality.

Constituent	Units	Cooling Tower Blowdown Water Quality at 5 Cycles	South Bay Recycled Water (2001 Water Quality Data)
Alkalinity-total	mg/L	920	184
Arsenic	ug/L	5.85	1.17
Boron	ug/L	262	525
Cadmium	ug/L	2.5	<0.5
Chloride	mg/L	1,040	208
Chromium	ug/L	5	<0.7
Copper	ug/L	15	3.5
Hardness-calcium	mg/L	241.5	245
Lead	mg/L	0.005	0.001
Mercury	ug/L	0.013	0.0026
Nickel	ug/L	35	6.5
Nitrate as NO_3	mg/L	45	40
Phosphate	mg/L	23	4.46
Potassium	mg/L	74.5	15
Silver	ug/L	5	<1.0
Sodium	mg/L	805	162
Sulfate	mg/L	470	107
Total dissolved solids	mg/L	3,745	748
Total suspended solids	mg/L	10	2.0
Temperature	Degrees F	73	69.1
Zinc	mg/L	0.260	0.052

8.15.2.5 Compliance with State Water Policies

Power Plant Cooling Policy (WRCB Resolution 75-58)

In 1975, the SCWRCB issued a policy on the use and disposal of inland surface waters used for power plant cooling (Resolution No. 75-58). The policy contains the following principles that are applicable to this project:

- The order of priority of water sources for power plant cooling was established subject to site specifics such as environmental, technical, economic, and feasibility considerations. The priority for water sources are: 1) waste water being discharged to the ocean, 2) ocean water, 3) brackish water from natural sources or irrigation return flows, 4) inland waste waters of low TDS, and 5) other inland waters.
- The use of inland waters for power plant cooling must analyze the impact on Delta outflow and Delta water quality objectives.

- The discharge of blowdown water from cooling towers must not cause a violation of water quality objectives or waste discharge requirements established by Regional Boards.

The SCWRCB Resolution No. 75-58 has been considered in the selection of the cooling water source and blowdown disposal for the PPP facility. The PPP project complies with SCWRCB Resolution 75-58 by incorporation of the following:

- Recycled water, which would otherwise be discharged to South San Francisco Bay by the San Jose/Santa Clara WPCP, was selected as the preferred source of PPP cooling water and feedwater for the power cycle makeup water treatment system. The selection of secondary effluent complies with the state's highest priority for cooling water sources.
- The method of cooling tower blowdown disposal will not cause a violation of water quality objectives or waste discharge requirements established by the San Francisco Bay Regional Water Quality Control Board (RWQCB). The planned method for disposal of waste water generated from the PPP cooling tower is conveyance back to the headworks of the San Jose/Santa Clara WPCP. Therefore, all cooling tower blowdown will be treated and discharged into South San Francisco Bay via the WPCP outfall. This discharge stream will fall under the existing San Jose/Santa Clara WPCP NPDES permit to discharge waste water to the Bay through the WPCP outfall.

CALFED Bay-Delta Program

The CALFED Bay-Delta Program (Program) is a combined state-federal-stakeholder effort to develop a comprehensive long-term plan to restore ecosystem health and improve water management for beneficial uses of the San Francisco Bay-Delta system. The PPP will not directly use water from the Delta since recycled water will be supplied to the PPP as its primary cooling water source via SBWR. Short-term emergency backup water will be provided by an onsite groundwater City groundwater extraction well.

California Water Conservation Policy

California Water Code, Section 461 requires all water users to conserve and reuse available water supplies to the maximum extent possible. The PPP will comply with this water conservation policy. The project has been designed to reduce cooling water requirements and discharge of waste water. Design considerations include the selection of a very efficient combined cycle system that requires less heat rejection than conventional steam cycle systems, and the use of cooling towers that use less cooling water than once-through cooling systems. Water conservation measures include reuse of cooling tower blowdown.

Bays and Estuaries Policy

The "Water Quality Control Policy for Enclosed Bays and Estuaries of California" established water quality principles and guidelines for the prevention of water quality degradation, and protection of beneficial uses of bay waters. The PPP will comply with this policy by incorporation of design features that will not discharge industrial waste water or contaminated storm water runoff to the San Francisco Bay.

Pollutant Policy for San Francisco Bay and the Delta

In 1990, the State Board adopted the "Pollutant Policy", which identified and characterized the pollutants of greatest concern in the Bay-Delta. This policy required that a monitoring program be implemented and established controls for waste water treatment plants, drydock facilities, dredge disposal practices, and boatyard discharges. The PPP will comply with this policy by incorporating design features that will not

directly discharge untreated industrial waste water or contaminated storm water runoff to San Francisco Bay.

California Wetlands Conservation Policy (Executive Order W-59-93)

This policy established state guidelines for wetlands conservation. The primary goal is to ensure no overall loss of wetlands and to achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage in California. The PPP facilities have been located so as avoid disturbance and impacts to wetlands areas.

8.15.2.6 Surface Water Quality and Storm Water Management

Site Drainage

The site grading and drainage will be designed to comply with all applicable federal, state, and local regulations. The general site grading will establish a working surface for construction and plant operating areas, provide positive drainage from buildings and structures, and provide adequate ground coverage for subsurface utilities.

At completion of the PPP, onsite drainage at PPP will be accomplished through gravity flow. The surface grading will direct storm water runoff to the proposed collection system via overland flow at a minimum slope of 0.5 percent. The main plant complex area will be graded with moderate slopes (1 percent minimum preferred) for effective drainage. A storm water collection system of underground pipes and inlets rather than open channels will be constructed due to site space constrictions. Storm water inlets will be constructed of cast-in-place or pre-cast concrete. The underground pipes will be sized to limit flow velocities to a maximum of 8 feet per second (fps) and a minimum, self-scouring velocity of 2 fps.

The buildings and structures will be located with the ground floor elevation a minimum of 6 inches above the finished grade. The preferred slope of the graded areas away from the structures will be one percent. In accordance with the latest City of Santa Clara Design Criteria, the PPP site drainage facilities will be designed to convey the 10-year storm event flow.

Surface Water Quality and Storm Water Discharge

The project drainage system will include oil-water separators that will receive storm water runoff from areas that are subject to oil contamination, including parking lots and gravel areas. The separators will be underground vaults with baffles to collect oils and solids. Storm water will be routed through the baffles, allowing oils to rise to the surface and solids to settle to the bottom. The vault(s) will be pumped out each fall prior to the winter season. Oils will be removed using oil-absorbent pillows or other acceptable methods and transported to an approved disposal facility.

It should be noted that hazardous material containment areas (those areas with walls or dams built to contain spillage) will utilize an independent collection and treatment system. This system is separate from the storm water collection and treatment system described in the prior paragraph.

Storm Water Management During Construction Activities

During construction, approximately 4.0 acres of land associated with the plant site and other facilities will be disturbed. Surface water impacts are anticipated to be primarily related to short-term construction activity and consist of increased turbidity due to erosion of newly excavated or placed soils. Activities such as grading can potentially destroy habitat and increase rates of erosion during construction. In addition, construction materials could contaminate runoff or groundwater if not properly stored and used. Compliance with engineering and construction specifications, following approved grading and drainage

plans, and adhering to proper material handling procedures will assure effective mitigation of these short-term impacts. In this way, possible erosion and other water quality degradation impacts will be reduced to less than significant levels. Best Management Practices (BMPs) for erosion control will be implemented. Additionally, erosion and sediment controls, surface water pollution prevention measures, and other BMPs will be developed and implemented for both construction and operational phases. These plans will be prepared in accordance with the Storm water Phase II Final Rule, Small Construction Program permit requirements of the San Francisco Bay RWQCB (USEPA 2000).

Pre- and Post- Development Run-off Conditions

The peak flow associated with the 10- and 100-year storm events at the site before construction (pre-development) was compared to the post-development (after construction) conditions. The result of this evaluation indicates that pre-project run-off conditions for the 10-year and 100-year storm events will be 2.91 cfs and 4.34 cfs, respectively. Post development run-off conditions for the same storm events were calculated to be 3.15 cfs and 4.69 cfs. Therefore, the PPP site development will result in a net increase in surface water run-off of 0.24 cfs (10-year storm) and 0.35 cfs (100-year storm). This slight increase represents a small and insignificant increase in the peak rate of storm water run-off to Santa Clara's storm water collection system during the design storm events.

The runoff conditions prior to development were determined using the guidelines contained in the latest City of Santa Clara Design Criteria. Surface water at the site currently drains to the north and south, with an indistinct ridge splitting the area west of Pico Way toward the neighboring (improved) sites located north and west of the property, and to the Kifer Receiving Station to the south. A localized high point also directs runoff to the northeast and east, toward Duane Avenue and the Pico easement (Pico Way). The wooded/grassed area east of the easement drains toward Duane Avenue and Lafayette Street.

Under post-development conditions, the runoff that previously drained toward adjacent properties will be redirected on-site and collected. Future site grading will approximately duplicate pre-development drainage patterns, with a central ridge splitting the center of the PPP site to the north and south, and a series of gentle ridges and valleys further directing storm water toward designed storm water collection inlets. The proposed drainage lines will connect with the existing fifty-four inch diameter storm drain located in Pico Way.

Sound engineering practices and BMPs will be employed in the project design and operation. Therefore, no significant impacts to surface water quality or quantity are expected during construction or operation of the proposed facility.

8.15.2.7 Groundwater

PPP site activities at the plant site will have very little potential to impact groundwater resources in the project area. The depth to groundwater beneath the site is estimated to be within 30 feet below ground surface (SCVWD 2001). Additionally, available groundwater quality information indicates that the upper aquifer zone in the vicinity of the site has been impacted by pollution and contamination and are not used for public water supply purposes (Iwamura 1995; RWQCB 2001). Storm water runoff from the industrial portions of the plant site will be discharged to an oil-water separator. No releases of contaminated storm water from the plant site operation are expected. No underground chemical storage tanks are proposed at the project site. Solid wastes and small amounts of hazardous waste that are generated will be properly accounted for, tracked, handled, and disposed off-site using licensed transporters. No significant impacts to the beneficial use of groundwater are expected from the construction or operation of the PPP Project.

The project will include sanitary facilities designed to handle the plant's domestic sewage needs. Sanitary wastes from the PPP will be conveyed across to the WPCP. Cooling tower blowdown and plant drainage will be likewise conveyed. Since no septic tanks are proposed at the plant site and all waste waters are disposed offsite, no adverse impacts to groundwater are anticipated.

Use of potable City water will be limited to emergency backup supply requirements in case of a recycled water supply outage. The development of the new City well will not impact groundwater storage capacity or water levels within the lower confined aquifer since: 1) the development of the new City water supply well will primarily be used to supplement the conveyance capacity of the water pipelines in the project vicinity, 2) there is an existing calculated excess groundwater capacity available to the City from the lower confined aquifer of 2,157.2 mg per year, and 3) groundwater levels in the lower confined aquifer are at historically high levels due to sufficient rainfall and SCVWD managewment. Thus, no significant impact to groundwater storage or water levels is expected from this project.

8.15.2.8 Natural Gas and Waste Water Discharge Pipelines

Impacts from the natural gas pipeline will be limited to trenching and land disturbance during construction. There is a potential for a small amount of accelerated erosion to occur during construction. The proposed project will minimize the potential for accelerated erosion through the use of appropriate erosion control, prompt backfilling of trenches and re-paving of the street surface. No significant impacts are expected due to construction of the natural gas and waste water discharge lines.

Operation of the pipelines will require periodic inspections. Emergency situations, though unlikely, may require immediate access. Impacts are expected to be minimal and will not significantly affect water resources. Therefore, there will be no significant adverse impacts due to operation of the natural gas and waste water discharge pipeline.

8.15.3 Proposed Mitigation Measures

This section presents mitigation measures proposed to reduce impacts to water resources in areas affected by the proposed project, including the plant site and ancillary facilities.

- Implement Best Management Practices designed to minimize soil erosion and sediment transport during construction of the plant site and project corridor features. Design appropriate erosion and sediment controls for slopes, catch basins, culverts, stream channels, and other areas prone to erosion.
- Conduct operations at the plant site in accordance with the Environmental Protection Agency (EPA) Storm water Phase II Final Rule (for small construction activities disturbing between one and 5 acres). Design and implement the Best Management Practices to prevent or control pollutants potentially associated with the operation of the plant from entering storm water sewers.
- Perform refueling and maintenance of construction equipment only in designated lined and/or bermed areas located away from stream channels. Prepare and implement spill contingency plans in areas where they are appropriate.
- During construction of pipelines utilize implement Best Management Practices to control soil erosion.
- Prepare and submit a Title 22 Engineer’s Report to the State DOHS and RWQCB to ensure safe use of recycled water for the cooling water. Adhere to Reclamation Requirements issued by the RWQCB.

8.15.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts will occur to water resources due to construction or operation of the PPP Project.

8.15.5 Cumulative Impacts

The PPP will not cause or contribute to cumulative impacts on water resources. Good engineering practices and Best Management Practices (BMPs) will be employed in the project design and operation; therefore, no significant impacts to surface water or groundwater quality are expected during construction or operation of the project.

Since the PPP will use recycled water for cooling purposes, there will be no significant cumulative impact on water supply or waste water disposal in the South Bay area. In the event of a requirement to use backup City potable water, the City has a current excess available groundwater capacity of 6621 acre-feet (2157.2 MG) per year. Thus, no significant cumulative impact to groundwater storage or water levels is expected from this project.

8.15.6 Applicable Laws, Ordinances, Regulations and Standards

Construction and operation of the proposed project including pipelines, and ancillary facilities will be conducted in accordance with all LORS related to water resources. The applicable LORS are discussed below.

8.15.6.1 Federal

Clean Water Act

The Clean Water Act (CWA), as amended, Title 40 CFR Parts 112, 122, and 125, strives to protect waters of the U.S. by restoring and maintaining the chemical, physical and biological properties of these waters. The CWA authorizes the USEPA to regulate discharges of waste water and storm water into surface waters by using NPDES permits and pretreatment standards. These permits are implemented at the state level by the State Water Resources Control Board (SWRCB). The PPP will return waste water to the San Jose/Santa Clara WPCP for discharge in accordance with the WPCP NPDES permit.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) of 1976 (40 CFR Part 260 et seq.) seeks to prevent surface and groundwater contamination, sets guidelines for determining hazardous wastes, and identifies proper methods for handling and disposing of those wastes. Appropriate RCRA guidelines and procedures will be followed with respect to disposal of any hazardous wastes. Section 8.14 (Waste Management) includes additional information of hazardous materials handling.

Comprehensive Environmental Response, Compensation, and Liabilities Act

The Comprehensive Environmental Response, Compensation, and Liabilities Act of 1980 (CERCLA) (40 CFR Parts 300 to 355) places responsibilities on the government and industry for the release, or threatened release, of hazardous materials into the environment. All chemicals will be stored, handled, and used in accordance with applicable laws, ordinances, regulations, and standards to minimize any possibility of potential release to the environment. Chemical storage and chemical feed areas will be designed to contain leaks and spills. Chemicals will be stored in appropriate chemical storage facilities.

8.15.6.2 State

The SWRCB in 1995 adopted the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. It includes water quality objectives for total dissolved solids and other constituents that are considered in this AFC.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines (CEQA Appendix G) define water resources impacts. These impacts are discussed in Section 7.2.

State Water Resources Control Board

In 1990, EPA promulgated rules establishing Phase I of the NPDES storm water program. Phase I addresses, among other discharges, discharges from large construction activities disturbing 5 acres or more of land. Phase II of the NPDES storm water program covers small construction activities disturbing between 1 and 5 acres. Phase II became final on December 8, 1999 with small construction permits due by March 10, 2003. Currently, the State Water Resources Control Board is working to develop a compliance program to meet the Phase II Final Rule.

Under the Phase II Final Rule, operators of Phase II small construction sites, will be required to obtain an NPDES permit and to implement practices to minimize pollutant runoff. For the Phase II small construction program, the EPA has taken a similar approach to Phase I where program requirements are not fully defined in the rule, but rather in the NPDES permit issued by the NPDES permitting authority.

The PPP will comply with any Phase II Final Rule requirements.

Porter-Cologne Water Quality Control Act of 1972

The Porter-Cologne Water Quality Control Act of 1972 established jurisdiction of the nine RWQCBs to control pollutant discharges to surface and groundwaters. The RWQCB is the local enforcement agency overseeing the PPP's SWPPP. The RWQCB will issue a waste discharge permit for project water that is to be discharged from the site.

Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

The Safe Drinking Water and Toxic Enforcement Act (Proposition 65) prohibits the discharge of any substance known to cause birth defects or cancer into sources of drinking water.

California Water Code § 461 and State Water Resources Control Board Resolution 77-1

This code encourages conservation of water resources and maximum reuse of waste water, particularly in areas where water is in short supply.

8.15.6.3 Local

Local ordinances typically address water-related issues such as drainage, erosion control, hazardous material spill control, flood zone construction, storm water discharge, and discharge of waste water to the municipal sewer system.

8.15.6.4 LORS Compliance Strategy

Within the specified regulatory framework, the PPP will comply with federal, state, and local LORS governing water resources. A conformance summary is provided in Table 8.15-6.

Process waste water from the PPP will be discharged in accordance with the San Jose/Santa Clara NPDES permit for their WPCF. A Pollution Prevention Plan and a Monitoring Plan will be implemented for PPP

operation. The State of California/American Public Works Association Storm water Task Force's *Manual of Best Management for Industrial Activities* will be used to provide general guidance in permit planning.

For compliance and control of sanitary waste water, permits will be obtained in accordance with the Environmental Health Program of the City of Santa Clara. The new sanitary systems will be designed according to the Uniform Plumbing Code.

A Storm water Pollution Prevention Plan (SWPPP) will be developed prior to submitting a Notice of Intent (NOI) with the State Water Resources Control Board for storm water discharge. The SWPPP will be implemented when the PPP facility begins operation. A water quality monitoring program will be developed and implemented concurrently with the commencement of industrial activities.

At least 30 days prior to the beginning of operations, the PPP will file an NOI to comply with the terms of the General Permit to discharge storm water associated with industrial activities.

8.15.7 Involved Agencies and Agency Contacts

Regulatory agencies and agency contacts related to water resources for the PPP Project are summarized in Table 8.15-7.

8.15.8 Permits Required and Permit Schedule

A schedule for agency required permits related to water resources is summarized in Table 8.15-8. Information required to obtain each permit is also included. Agencies will be contacted to obtain the necessary permits at the appropriate time.

Table 8.15-6. Applicable laws, ordinances, regulations, and standards.

LORS	Applicability	Conformance
Federal:		
CWA	Regulates discharges of waste water and storm water in order to protect nation's waters. Applies to waste water discharged from cooling tower basin and storm water runoff.	Discharges of waste water and storm water subject to NPDES permits and treatment standards (Sections 7.2.1 & 7.2.2).
RCRA	Controls storage, treatment, disposal of hazardous waste.	Hazardous waste will be handled and stored in conformance with Subtitle C. Section 8.13.4. On-site conditioning, treatment, discharge systems will be monitored under the NPDES permitting process.
CERCLA	Places responsibility for releases of hazardous materials into the environment.	Obtain waste generator number and waste discharge/disposal permits as appropriate.
California:		
SWRCB Water Quality Orders	Regulates industrial storm water discharges during construction and operation of the facility.	As part of EPA Storm water Phase II Final Rule, will require construction sites between 1 and 5 acres to comply with Phase II Final Rule by March 10, 2003.
Porter-Cologne Water Quality Control Act	Controls discharge of waste water to the surface and groundwaters of the state.	Discharge will be in accordance with CWA/Porter-Cologne NPDES/WDR permit.

Table 8.15-6. Applicable laws, ordinances, regulations, and standards.

LORS	Applicability	Conformance
	Applies to waste water discharged from cooling tower.	Sections 8.13. and Section 7.
Safe Drinking Water & Toxic Enforcement Act	Proposition 65 prohibits certain discharges to drinking water sources.	Part of federal NPDES permit requirements. Compliance monitored by regional WQCB.
California Water Code Section 461 & SWRCB Resolution 77-1	Encourages conservation of water resources.	Effective practices for water conservation and reuse were engineered into the facility design. Section 7.
Santa Clara Valley Water District (SCVWD)	Under Ordnance 90-1, A well permit is required for construction of any well or excavation greater than 45 feet deep.	City of Santa Clara will apply to the SCVWD for a well permit a minimum of 10 business days prior to well construction. A well permit application will also be completed.
Local:		
City of Santa Clara Sewer Permit	Applies to cooling tower blowdown and plant drainage waste water from process areas that is sent to the headworks of the San Jose/Santa Clara WPCP.	Treatment of these aqueous wastes will be performed as required to meet limits established by the City of Santa Clara.
Various	Address issues such as drainage, erosion control, hazardous material spill control, facility siting in flood zones, storm water discharge, and discharge of waste water to the municipal sewer system.	Project will comply with the General Plan of City of Santa Clara and 2002 Water Master Plan.

Table 8.15-7. Involved agencies and agency contacts.

Agency/Address	Contact/Telephone No.	Permit Requirement/Reason for Involvement
City of Santa Clara	Mr. Robin Saunders Director, Water and Sewer Phone: (408) 615-2000	Will-serve letter for SBWR recycled water.
City of Santa Clara	Mr. Alan Kurotori Assistant Director, Water Phone: (408) 615-2000	City of Santa Clara, potable water supply system.
City of San Jose	Mr. Carl Mosher Director, Environmental Services Department, City of San Jose Phone: 408-277-5540	Will-serve letter for SBWR recycled water.
South Bay Water Recycling	Mr. Eric Rosenbloom Program Manager, SBWR Phone: 408-945-5305	SBWR system reliability data.

California Department of Water Resources	Mr. Jim Goodridge Phone: (530-893-4036)	Storm event and other climatic data for Santa Clara County
Santa Clara Valley Water District	Ms. Seena Hoose Engineering Geologist Phone: 408-265-2607 Ext. 2633	Groundwater hydrogeology and well permitting

Table 8.15-8. Required permits and permit schedule.

Permit	Schedule
Grading and Excavation Permit: • Erosion Control Plan • Plans to import or export material • Drawings of cuts and fills with quantities • Earth-moving equipment and haul routes • Dust and noise controls • Work schedule	30 days prior to start of construction activities
NPDES Phase II Final Rule for Storm water Discharges Associated with Construction activities involving sites between 1 and 5 acres.	To be determined by State Water Resources Control Board.
NPDES General Permit for Storm water Discharges Associated with Industrial Activities: • Submit Notice of Intent (NOI), including facility information, receiving water information, implementation requirements, site map, and certification • Prepare a Storm water Pollution Prevention Plan (SWPPP) • Prepare a Storm water Monitoring Plan (SMP)	Submit NOI at least 30 days prior to beginning operations.

Table 8.15-8. Required permits and permit schedule.

Permit	Schedule
Title 22 Reclamation Requirements: • Sufficient information to show treatment and reliability commensurate with proposed use; no health hazard or nuisance • Contingency plans, supplemental supply • Monitoring plan • Transmission and distribution systems • Area uses, description and map • Wind data	Submit Engineer's Report 120 days prior to start of operation.

8.15.9 References

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